

Exhibit 33

1 UNITED STATES DISTRICT COURT
2 FOR THE EASTERN DISTRICT OF TEXAS
3 MARSHALL DIVISION

4 ---oo---

5 NETLIST, INC.,

6 Plaintiff,

7 vs.

No. 2:22-cv-203-JRG-RSP

8 MICRON TECHNOLOGY, INC.;

9 MICRON SEMICONDUCTOR

10 PRODUCTS, INC.; MICRON

11 TECHNOLOGY TEXAS LLC,

12 Defendants.

13 _____/

14 [REDACTED]

15 REMOTE VIDEOTAPED DEPOSITION OF

16 BOE HOLBROOK

17 30(B)(6) DESIGNEE, MICRON

18 _____
19 WEDNESDAY, AUGUST 30, 2023

20
21
22
23 REPORTED BY: HOLLY THUMAN, CSR No. 6834, RMR, CRR
24 JOB NUMBER 6066631

1 --oo--

2 Remote videotaped deposition of BOE HOLBROOK,
3 taken by the Plaintiff, with the witness located in
4 Boise, Idaho, commencing at 10:16 A.M. Mountain Time,
5 on WEDNESDAY, AUGUST 30, 2023, before me, HOLLY THUMAN,
6 CSR, RMR, CRR.

7 --oo--

8 APPEARANCES

9 (ALL APPEARANCES REMOTE)

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22 By: MATTHEW HOPKINS, Attorney at Law
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24 ALSO PRESENT:

25 TONY NOKES, Videographer
CARRISA NARCISO, Tech Concierge
BECKY CARRIZOSA, In-house counsel, Micron

I N D E X

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| EXAMINATION BY: | PAGE |
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EXHIBITS MARKED FOR IDENTIFICATION

| NO. | DESCRIPTION | PAGE |
|------------|---|------|
| Exhibit 1 | JEDEC Standard JESD82-31A, August 2019 (SAM-NET00332467 through -665) | 16 |
| Exhibit 2 | JEDEC Standard JESD82-32A, August 2019 (MICNL203-00012556 through -755) | 17 |
| Exhibit 3 | Micron document, "3-Dimensional Stack (3DS) DDR4 SDRAM" | 37 |
| Exhibit 5 | Micron document "DDR4 SDRAM LRDIMM" (MICNL203-00001364 through -391) | 55 |
| Exhibit 6 | Micron document, "DDR5 SDRAM RDIMM Addendum" (MICNL203-00000678 through -685) | 91 |
| Exhibit 7 | Master Revision Control Document 3408.01 | 90 |
| Exhibit 8 | Micron document, "DDR5 SDRAM SODIMM Core" (MICNL203-00000562 through -580) | 90 |
| Exhibit 9 | Master Revision Control Document 3163.01 | 90 |
| Exhibit 10 | Master Revision Control Document 3405.1 | 92 |

(Cont'd)

| | | |
|----|--------------------|---|
| 1 | (Exhibits, cont'd) | |
| 2 | Exhibit 12 | Press release, May 7, 2012, "Micron 110 Announces Its First Fully Functional DDR4 DRAM Module" |
| 3 | Exhibit 14 | Presentation deck, "Micron/Netlist 112 Partnership Opportunity, April 2015" (NL-MIC-203_00041942 through -2004) |
| 4 | Exhibit 16 | Micron document, "DDR4 SDRAM LRDIMM" 99 (MICNL203-00001364 through -391) |
| 5 | Exhibit 17 | US Patent 10,949,339, Lee et al. 105 |
| 6 | Exhibit 18 | Page from presentation deck with 108 diagrams headed "Micron" Nd "Netlist Patents" |
| 7 | Exhibit 19 | Texas Instruments presentation deck, 124 "Alternative HDLR Dimm Concept," October 6, 2008 (NETLIST_SAMSUNG_EDTX00056236 through -245) |
| 8 | Exhibit 20 | Document marked as Exhibit 19, with 126 highlights |
| 9 | Exhibit 21 | Page from presentation deck with 133 headings for Micron, Netlist Patents, and TI JEDEC Presentation |
| 10 | Exhibit 23 | Presentation deck, "Micron/Netlist 142 Partnership Opportunity, April 2015" (NL-MIC-203_00041942 through -2004) |
| 11 | Exhibit 25 | Minutes of Meeting No. 164, JC-40 144 Digital Logic Committee, December 9, 2010 (SAM-NET00078119 through -134) |
| 12 | Exhibit 26 | Richtek document, "DDR5 VR on DIMM 148 PMIC" (MICNL203-00059886 through -60009) |
| 13 | Exhibit 27 | Minutes of Meeting No. 193, JC-40 156 Digital Logic Committee, June 4-6, 2018 (SAM-NET00246201 through -225) |
| 14 | (Cont'd) | |

1 (Exhibits, cont'd)
2 Exhibit 29 Presentation slide, "4.3.1.0, 158
#2259.39, Micron, Voltage Regulators
3 for DDR5 DIMMs"
4 Exhibit 30 Minutes of Meeting No. 59, JC-45 162
Module Committee, June 4-6, 2018
5 (NETLIST_SAMSUNG_EDTX00158253 through
-287)
6
7 --oo--
8 INSTRUCTIONS TO WITNESS/REQUESTS TO MARK TRANSCRIPT
9
10 Instruction not to answer 76 23
11 Instruction not to answer 175 15
12 Instruction not to answer 175 24
13 --oo--
14 REPORTER'S NOTE: Exhibits Numbers 4, 11, 15, 22, 24,
and 28 were not used.
15
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25

1 EXAMINATION BY MR. SHEASBY 10:18:58

2 BY MR. SHEASBY: 10:18:58

3 Q. Good morning, sir. Can you state your 10:18:59
4 full name for the record? 10:19:00

5 A. Full name is Boe Holbrook. 10:19:01

6 Q. And, sir, you've been designated to speak 10:19:03
7 on behalf of the entire Micron defendant 10:19:06
8 corporation as to a number of technical topics. Is 10:19:09
9 that correct? 10:19:11

10 A. That's correct. 10:19:12

A horizontal bar chart showing 15 data series. Each series is represented by a thick black horizontal bar. The bars are of varying lengths, indicating different values for each series. The bars are positioned side-by-side, with a small gap between them. The chart is set against a white background with a light gray grid.

1 Q. By the way, just so -- before we do that, 11:08:23
2 Exhibit 1 is the RCD specification. 11:08:26
3 Do you see that? 11:08:29
4 A. Yes, I see that. 11:08:31

1 Q. A rank is one or more -- well, let me ask 11:43:14
2 it this way: 11:43:16

5 A. So modules? 11:43:22

6 Q. Yes, sir. 11:43:24

7 A. Logic -- or, excuse me, physical ranks 11:43:26
8 supported by the RCD would be four physical ranks. 11:43:29

9 Q. And in JEDEC DDR parlance, a rank is two 11:43:37
10 or more memory devices. Is that correct? 11:43:41

11 A rank is defined as a group that 11:43:43
12 comprises a full 64-bit data bus. So it would be, 11:43:47
13 at a minimum, the number of devices that are 11:43:55
14 required to meet that full data bus. 11:43:58

15 O. And, historically, how many has that been? 11:44:01

16 A. So for a x8-based module, that would be 11:44:04
17 eight devices. For a x4-based, so four DQs in a 11:44:13
18 DRAM -- x8 is going to be 8 DQs. So four DQs, 11:44:20
19 x4 configuration, that would be 16 DRAM. 11:44:24

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

7 Q. And, by the way, do you know what the 11:46:45
8 difference is -- between a signal and an encoded 11:46:47
9 packet of data is in JEDEC? 11:46:50

10 A. JEDEC definition, I do not know what that 11:46:57
11 would be; but I understand what a signal would be 11:47:00
12 versus an encoded packet of data. 11:47:03

13 Q. What's the difference between a signal and 11:47:07
14 an encoded packet of data? 11:47:10

15 A. So a signal, from my understanding, is a 11:47:12
16 single, defined signal, a 1 or a 0. Encoded data, 11:47:16
17 group of data, would be a group of 1s and 0s that 11:47:23
18 would be encoded by a device. 11:47:28

19 Q. Do you remember FBDIMMs? 11:47:32

20 A. I am familiar with FBDIMMs. 11:47:36

21 Q. A little before your time? 11:47:39

22 A. A little bit. 11:47:42

23 Q. And you know that they use an advanced 11:47:43
24 memory buffer. 11:47:45

25 Do you remember that? 11:47:47

1 A. Yes, sir. 11:47:48

2 Q. And in an advanced memory buffer, they 11:47:48

3 use -- that uses encoded data as opposed to data 11:47:52

4 signals. Correct? 11:47:55

5 A. I wouldn't know. AMB and FBDDIMM was not 11:48:00

6 my area of expertise. 11:48:04

7 Q. But you understand that there is a 11:48:06

8 difference between encoded data and data signals in 11:48:08

9 terms of how you're controlling memory devices on a 11:48:12

10 module. 11:48:15

11 A. So how memory devices are controlled on a 11:48:18

12 module in respect to FBDDIMM, yes, I understand 11:48:21

13 that. 11:48:28

11. **What is the primary purpose of the `get` method in the `HttpURLConnection` class?**

11. **What is the primary purpose of the `get` method in the `HttpURLConnection` class?**

For more information, contact the Office of the Vice President for Research and Economic Development at 515-294-6450 or research@iastate.edu.

For more information, contact the Office of the Vice President for Research and Economic Development at 319-273-2500 or research@uiowa.edu.

1 CERTIFICATE OF REPORTER

2 I, HOLLY THUMAN, a Certified Shorthand Reporter,
3 hereby certify that the witness in the foregoing
4 deposition was by me duly sworn to tell the truth, the
5 whole truth, and nothing but the truth in the
6 within-entitled cause; that said deposition was taken
7 down in shorthand by me, a disinterested person, at the
8 time and place therein stated; and that the testimony
9 of said witness was thereafter reduced to typewriting
10 by computer, to the best of my ability via remote
11 videoconferencing, under my direction and supervision;

12 That before completion of the deposition review of
13 the transcript [] was [X] was not requested/offered.
14 If requested, any changes made by the deponent (and
15 provided to the reporter) during the period allowed are
16 appended hereto.

17 I further certify that I am not of counsel or
18 attorney for either or any of the parties to the said
19 deposition, nor in any way interested in the event of
20 this cause, and that I am not related to any of the
21 parties thereto.

22
23 DATED: 9/05/2023

24 

25 HOLLY THUMAN, CSR

1 JASON G. SHEASBY, ESQ.

2 JSheasby@irell.com

3 September 5, 2023

4 RE: NETLIST, INC. vs. MICRON TECHNOLOGY, INC.

5 AUGUST 30, 2023-BOE HOLBROOK-30(B)(6)-JOB NO.6066631

6 The above-referenced transcript has been

7 completed by Veritext Legal Solutions and

8 review of the transcript is being handled as follows:

9 ____ Per CA State Code (CCP 2025.520 (a)-(e)) - Contact Veritext
10 to schedule a time to review the original transcript at
11 a Veritext office.

12 ____ Per CA State Code (CCP 2025.520 (a)-(e)) - Locked .PDF
13 Transcript - The witness should review the transcript and
14 make any necessary corrections on the errata pages included
15 below, notating the page and line number of the corrections.
16 The witness should then sign and date the errata and penalty
17 of perjury pages and return the completed pages to all
18 appearing counsel within the period of time determined at
19 the deposition or provided by the Code of Civil Procedure.

20 ____ Waiving the CA Code of Civil Procedure per Stipulation of
21 Counsel - Original transcript to be released for signature
22 as determined at the deposition.

23 ____ Signature Waived - Reading & Signature was waived at the
24 time of the deposition.

25

Federal R&S Requested (FRCP 30(e)(1)(B)) - Locked .PDF

Transcript - The witness should review the transcript and make any necessary corrections on the errata pages included below, notating the page and line number of the corrections. The witness should then sign and date the errata and penalty of perjury pages and return the completed pages to all appearing counsel within the period of time determined at the deposition or provided by the Federal Rules.

X Federal R&S Not Requested - Reading & Signature was not requested before the completion of the deposition.